ABSTRACT

There is provided a semiconductor device comprising a first semiconductor layer of a first conductivity type, a second semiconductor layer of a second conductivity type formed on the first semiconductor layer, the second conductivity type being different from the first conductivity type, a third semiconductor layer of the first conductivity type selectively formed on the second semiconductor layer, a trench formed through the third semiconductor layer and the second semiconductor layer to reach the first semiconductor layer, a gate dielectric film formed along side and bottom surfaces of the trench, and a gate electrode formed to be in contact with the gate dielectric film at the side surfaces of the trench, surfaces of the gate electrode that are opposite to the surfaces contacting the gate dielectric film, and the gate dielectric film at a bottom of the trench forming a hollow portion extending from the bottom to an opening side of the trench.